

What Is Claimed Is:

Sub A17
1. A high stability, low emission, fuel
emulsion composition for an internal combustion engine
5 comprising

a) 26-50% purified water;

b) 50-74% hydrocarbon petroleum distillate;

said emulsion having an average droplet diameter of
less than about 10 microns.

10

2. The fuel emulsion composition of claim
1 wherein said emulsion has an average droplet
diameter of between about 4 microns and about 6
microns.

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3. The fuel emulsion composition of claim
1 comprising 30 - 35 % purified water

Sub A27
4. The fuel emulsion composition of claim
20 1 wherein said purified water is purified using
reverse osmosis, distillation, or ion exchange
processes.

5. The fuel emulsion composition of claim
25 4 wherein said water is purified using reverse
osmosis.

Sub A27
6. The fuel emulsion composition of claim
1 wherein said hydrocarbon petroleum distillate is
30 high paraffinic having a aromatic content of less than
3%.

7. The fuel emulsion composition of claim
35 1 wherein said hydrocarbon petroleum distillate is
diesel fuel.

8. The fuel emulsion composition of claim
1 further comprising:

- 5 c) surfactant; A
d) lubricant; A
e) corrosion inhibitor;
f) antifreeze; and
g) ignition delay modifier.

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10 9. The fuel emulsion composition of claim
8 wherein said surfactant comprises
alkylphenoethoxylates, alcohol ethoxylates, fatty
alcohol ethoxylates, alkyl amine ethoxylates or
mixtures thereof.

15 10. The fuel emulsion composition of claim
9 wherein said surfactant is comprised of one or more
of the compositions selected from the group consisting
of Triton X-102; Tergitol TMN-10; Neodol N1-5; CA-720;
20 NP-9; and Pluronic 17R-2.

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25 11. The fuel emulsion composition of claim
8 wherein said lubricant comprises one or more C₁₂ to
C₂₂ backbone chains having an adducted acid, wherein
each said adducted acid is selected, independently
from the other, from the group consisting of mono-
phosphoric acid, di-phosphoric acid, tri-phosphoric
acid, mono-carboxylic acid, di-carboxylic acid and
tri-carboxylic acid.

30 12. The fuel emulsion composition of claim
11 wherein said lubricant further comprises an
alkanolamine neutralizer.

35 13. The fuel emulsion composition of claim

12 wherein said adducted acid is mono- di- or tri-carboxylic acid.

14. The fuel emulsion composition of claim
5 12 wherein said alkanolamine neutralizer is amino methyl propanol.

15. The fuel emulsion composition of claim
8 wherein said corrosion inhibitor is an aminoalkanoic
10 acid.

16. The fuel emulsion composition of claim
8 wherein said antifreeze is an organic alcohol.

17. The fuel emulsion composition of claim
16 wherein said antifreeze is methanol.

18. The fuel emulsion composition of claim
8 wherein said ignition delay modifier comprises one
20 or more compounds selected from the group consisting of nitrates, nitrites and peroxides.

19. The fuel emulsion composition of claim
18 wherein said ignition delay modifier comprises
25 2-ethylhexylnitrate.

20. The fuel emulsion composition of claim
18 wherein said ignition delay modifier comprises ammonium nitrate.

21. The fuel emulsion composition of claim
8 comprising 67% by weight diesel fuel, 30% by weight purified water, 2% by weight methanol, 0.16% by weight X-102; 0.08% by weight N1-5; 0.08% by weight TMN-10,
35 0.04% Diacid 1550, 0.06% AMP-95, 0.05% Synkad 828, and 0.37% 2-ethylhexylnitrate.

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SubA6

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